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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gregory D. May

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EXAMINER

WANG, QUAN ZHEN

ART UNIT

PAPER NUMBER

2613

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/027,249	<b>Applicant(s)</b> MAY ET AL.	
	<b>Examiner</b> Quan-Zhen Wang	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-5,7,10-12,14-18,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,10-12,14-18,24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Heston (M.L. Heston et al., "Use of the acoustic-optic tunable filter for optical spectrum analysis and EDFA power equalization in WDM systems", OFC'96 Technical Digest, 1996, page 249-250).

Regarding claim 1, Heston discloses a method of measuring optical signal power in an optical system (figs. 1 and 3), comprising: receiving optical signals at a wavelength selective switch (fig. 1(B), PIAOTF); passing a subset of the optical signals comprised of more than one individual wavelength through the wavelength select switch at substantially the same time to a power meter (fig. 1(B) the detector and phase sensitive detection and equalization controller); measuring power in the subset of optical signals using the power meter (paragraph 1); and displaying (figs. 3(A) and 3(B)) an indication of the optical signal power in the optical signals on a monitor to a system administrator.

### ***Claim Rejections - 35 USC § 103***

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-5, 7, 10-12, 14-18, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and further in view of Alexander et al. (U.S. Patent US 5,986,782).

Regarding claims 1 and 12, Sugaya discloses an apparatus (fig. 11) for measuring optical power in an optical system, comprising: a wavelength select unit (fig. 11, combination of 30 and 13) having output ports (fig. 11, outputs from element 13 and 30) to selectively pass received optical signals to one of the output ports (fig. 11, the output from element 30 to element 31), the wavelength select unit (fig. 11, combination of 30 and 13) passes a set of the optical signals comprised of more than one individual wavelength to the one of the output ports (fig. 11, the output signals from element 30 to element 31) at the same time, and a power meter (fig. 11, PD 31; note that PD detects the power, see column 2, lines 6-12) measures the power in the subset of the optical signals (fig. 11, signals output from element 30 to PD 31); the power meter (fig. 11, PD 31) which receives optical signals (fig. 11, the signal from element 30 to PD 13) from an output port (the output from element 30) and measures the power in the optical signals. Sugaya differs from the claimed invention in that Sugaya does not specifically disclose that the wavelength select unit is a wavelength select switch. However, a wavelength

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select switch is well known in the art. For example, Prohaska discloses a wavelength select switch (fig. 7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a wavelength select switch, such as the one taught by Prohaska, in the system of Sugaya to replace the wavelength select unit in order to select a wavelength within a short switching time. The modified system of Sugaya and Prohaska differs from the claimed invention in that Sugaya and Prohaska do not specifically teach displaying an indication of the optical signal power in the optical signal on a monitor to a system administrator. However, it is well known in the art to include an optional indicator to signal the system status. For example, Alexander discloses an optional local alarm indicator (fig. 2, local alarm 59). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include an optional local alarm indicator, as it is disclosed by Alexander, in the modified system of Sugaya and Prohaska in order to provide an alarm signal to indicate the status of the system.

Regarding claims 3 and 14, Sugaya teaches that the optical signal comprises different wavelengths of optical energy (column 3, line 61 to column 4, line 4).

Regarding claims 4-5 and 15-16, Sugaya teaches an optical tap or power splitter (fig. 11, optical tap 22) that diverts a portion of optical signals incident on an optical medium to obtain the optical signals.

Regarding claims 7 and 18, Sugaya further teaches successively directing optical signals through the wavelength select switch cycles others of the optical signals to the other output port (fig. 11, the output from element 13 to PD 14) and the power meter

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(fig. 11, PD 14) measures power in the others of the optical signals (column 13, lines 35-51). The modified system of Sugaya and Prohaska differs from the claimed invention in that Sugaya and Prohaska do not specifically disclose that the optical powers are detected with one power meter. However, it is well known in the art to detect optical powers using one power meter. For example, Alexander discloses to use one power meter to detect optical signals (column 4, lines 49-60). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a optical power meter to detect the powers of optical signals, as it is taught by Alexander, in the modified system of Sugaya and Prohaska in order to reduce the number of power meters needed.

Regarding claim 10, the modified system of Sugaya and Alexander further discloses to determine if the power in the optical signal has crossed a predetermined threshold and trigger an alarm (Alexander: fig. 2, local alarm 59) if the power in the optical signal has crossed the predetermined threshold.

Regarding claim 11, Sugaya further discloses controlling an optical amplifier (fig. 11, combination of 25, 26, 27, 28, and 29) in accordance with the power of the optical signal to regulate optical power of the optical signals on the transmission medium (column 3, line 61 to column 4, line 4).

Regarding claim 17, the modified system of Sugaya, Prohaska, and Alexander can be applied measure DWDM signals since Prohaska discloses that the wavelength select switch can be used for DWDM signals (paragraph 0002).

Regarding claims 24 and 25, Sugaya further discloses that the power meter (fig. 11, PD 13) measures the combined power of the optical signals.

### ***Response to Arguments***

5. Applicant's arguments in regard with claim 10 filed on December 5, 2006 have been considered but they are not persuasive.

Regarding claim 10, Applicant argues that the alarm of Alexander is activated on a predetermined signal-to-noise ratio. However, as it is well understood in the art, the signal-to-noise ratio is the measure of the optical power of an optical signal and that of the noise background. For a given an optical amplifier, such as amplifiers used in the systems of Sugaya and Alexander, the noise figure is predetermined and the signal-to-noise ratio is directly related to the signal power. Therefore, the trigger of the alarm by a predetermined signal-to-noise ratio can be obviously translated to "triggering an alarm if the power of the optical signals has crossed the predetermined threshold." In addition, in order to determine the signal-to-noise ratio, not only the power of the optical signal must to be measured and calculated, as it is disclosed by Alexander ("... the measured and calculated power levels for an 8-channel WDM optical system"; column 5, lines 23-35). Therefore, the disclosure of Alexander reads on the claimed limitations of "triggering an alarm if the power of the optical signals has crossed the predetermined threshold."

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6. Applicant's other arguments filed on December 19, 2006 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment has changed the scopes of the claims and necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw  
2/3/2007

  
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